12. The method of claim 11, wherein generating the second optical signal further comprises:

passing the second optical signal through an optical waveguide optically coupled to an optical resonator having a resonant frequency equal to the carrier frequency of the generated optical signal to extract the second optical signal and reject any harmonic frequencies.

13. The method of claim 12, wherein the sum of the N sub-band data signals comprises the incoming data signal.

14. The method of claim 12, wherein each optical resonator comprises a microresonator.

15 ~~16~~. The method of claim 14, wherein each microresonator is selected from the group consisting of microsphere resonators and microdisk resonators.

16 ~~17~~. The method of claim 12, wherein amplitude modulating the incoming data signal comprises:

amplitude modulating the incoming data signal in a dual-output port Mach-Zehnder interferometric modulator.

17 ~~18~~. A system, comprising:

from the local oscillator optical signals passing through the second optical waveguide; and

N photodetectors, each photodetector configured for summing the channel and local oscillator optical signal removed by each corresponding pair of first and second optical resonators having equal resonant frequencies to generate N sub-band data signals.

18 ~~19~~. The system of claim 17 ~~18~~, wherein the sum of the N sub-band data signals comprises the incoming data signal.

19 ~~20~~. The system of claim 17 ~~18~~, wherein each optical resonator comprises a microresonator.

20 ~~21~~. The system of claim 19 ~~20~~, wherein each microresonator is selected from the group consisting of microsphere resonators and microdisk resonators.

21 ~~22~~. The system of claim 17 ~~18~~, wherein at least one of the first and second modulators comprises:

a Mach-Zehnder interferometric modulator.

22 ~~23.~~ The system of claim 17 ~~18,~~ wherein the optical source comprises:

an optical generator for generating an optical signal; and

an optical splitter for splitting the optical signal into identical first and second optical signals.

23 ~~24.~~ The system of claim 22 ~~23,~~ wherein the sum of the N sub-band data signals comprises the incoming data signal.

24 ~~25.~~ The system of claim 22 ~~23,~~ wherein each optical resonator comprises a microresonator.

25 ~~26.~~ The system of claim 24 ~~25,~~ wherein each microresonator is selected from the group consisting of microsphere resonators and microdisk resonators.

26 ~~27.~~ The system of claim 22 ~~23,~~ wherein at least one of the first and second modulators comprises:

a Mach-Zehnder interferometric modulator.

27 ~~28.~~ The system of claim 17 ~~18,~~ wherein the optical source generates an optical signal having a predetermined carrier frequency and the first modulator comprises:

a dual output interferometric modulator to generate the data optical signal as one output and to generate the second optical signal as the other output.

28 ~~29.~~ The system of claim 27 ~~28,~~ further comprising:

a third optical waveguide for passing the second optical signal therethrough; and

an optical resonator having a resonant frequency equal to the carrier frequency of the generated optical signal and optically coupled to the third optical waveguide to extract the second optical signal and reject any harmonic frequencies.

29 ~~30.~~ The system of claim 28 ~~29,~~ wherein the sum of the N sub-band data signals comprises the incoming data signal.

30 ~~31.~~ The system of claim 28 ~~29,~~ wherein each optical resonator comprises a microresonator.

31 ~~32.~~ The system of claim 30 ~~31,~~ wherein each microresonator is selected from the group consisting of microsphere resonators and microdisk resonators.

32 ~~33.~~ The system of claim 21 ~~22,~~ wherein the first modulator comprises:

a dual-output port Mach-Zehnder interferometric modulator.